

1. A treatment medium for purifying a quantity of water, comprising:
an alumina substrate having been heated to a temperature in the
range of 300°F to 375°F and having a predetermined weight; and
a quantity of silver deposited on the alumina substrate, the quantity
of silver having a predetermined weight in the range of about 1% to 10% of
the predetermined weight of the alumina substrate.
2. The treatment medium of claim 1, wherein the quantity of silver is
sufficient to release a concentration of silver in the range of about 50 parts
per billion to 100 parts per billion to water treated by the treatment medium.
3. The treatment medium of claim 1, wherein the alumina substrate has
a particle size in the range of about 4 mesh to 20 mesh.
4. The treatment medium of claim 3, wherein the alumina substrate has
a particle size in the range of about 8 mesh to 14 mesh.
5. The treatment medium of claim 1, wherein the alumina substrate is
substantially insoluble in water.
6. The treatment medium of claim 1, wherein the alumina substrate has
a porosity that provides a surface area of at least 150 square inches per
gram.
7. The treatment medium of claim 6, wherein the alumina substrate has
a porosity that provides a surface area of at least 210 square inches per
gram.
8. The treatment medium of claim 1, wherein the alumina substrate has
a pH in the range of about 5 to 9.
9. The treatment medium of claim 1, wherein the alumina substrate has
a hardness of greater than about 2.5 according to the Mohs scale.

10. The treatment medium of claim 9, wherein the alumina substrate has a hardness of greater than about 9.0 according to the Mohs scale.

11. A treatment medium for purifying a quantity of water, comprising:
5 an alumina substrate having been heated to a temperature in the range of 300°F to 375°F or less and having a predetermined weight;
a quantity of filler material intermixed within the alumina substrate, the quantity of filler material having a predetermined weight; and
10 a quantity of silver deposited on the alumina substrate, the quantity of silver having a predetermined weight in the range of about 1% to 10% of the sum of the predetermined weight of the alumina substrate and the predetermined weight of the quantity of filler material.

12. The treatment medium of claim 11, wherein the quantity of silver is
15 sufficient to release a concentration of silver in the range of about 50 parts per billion to 100 parts per billion to water treated by the treatment medium.

13. The treatment medium of claim 11, wherein the filler material is a charcoal.
20

14. The treatment medium of claim 13, wherein the filler material is activated charcoal.

15. The treatment medium of claim 11, wherein the predetermined weight
25 of the quantity of filler material is greater than the predetermined weight of the alumina substrate.

16. The treatment medium of claim 15, wherein the predetermined weight of the quantity of filler material is greater than the predetermined weight of
30 the alumina substrate, but less than or equal to five times the predetermined weight of the alumina substrate.

17. The treatment medium of claim 16, wherein the predetermined weight of the quantity of filler material is about two times greater than the
35 predetermined weight of the alumina substrate.

10071565-020602

18. The treatment medium of claim 11, wherein each of the alumina substrate and the filler material has a hardness according to the Mohs scale, and wherein the hardness of the alumina substrate is greater than the hardness of the filler material.

5

19. The treatment medium of claim 18, wherein the hardness of the alumina substrate is greater than about 2.5 according to the Mohs scale, and the hardness of the filler material is less than about 2.5 according to the Mohs scale.

10

20. A method of forming a treatment medium for purifying a quantity of water, comprising the steps of:

providing an alumina substrate having a predetermined weight;

heating the alumina substrate to a temperature in the range of 300°F

15

to 375°F for a predetermined amount of time;

depositing a quantity of silver onto the alumina substrate, wherein the quantity of silver has a predetermined weight that is in the range of about 1% to 10% of the predetermined weight of the alumina substrate.

20

21. The method of claim 20, wherein the quantity of silver is sufficient to release a concentration of silver in the range of about 50 parts per billion to 100 parts per billion to water treated by the treatment medium.

22. A method of forming a treatment medium for purifying a quantity of water, comprising the steps of:

25

providing an alumina substrate having a predetermined weight;

introducing a quantity of filler material within the alumina substrate, the quantity of filler material having a predetermined weight;

heating the alumina substrate with intermixed quantity of filler material to a temperature in the range of 300°F to 375°F for a predetermined amount of time; and

30

depositing a quantity of silver onto the alumina substrate with introduced quantity of filler material, wherein the quantity of silver has a predetermined weight that is in the range of about 1% to 10% of the sum of

20071565-020800

the predetermined weight of the alumina substrate and the predetermined weight of the filler material.

23. The method of claim 22, wherein the quantity of silver is sufficient to
5 release a concentration of silver in the range of about 50 parts per billion to 100 parts per billion to water treated by the treatment medium.

24. The method of claim 22, wherein the filler material is a charcoal.

10 25. The method of claim 24, wherein the filler material is activated charcoal.

26. The method of claim 22, wherein the predetermined weight of the
15 quantity of filler material is greater than the predetermined weight of the alumina substrate.

27. The method of claim 26, wherein the predetermined weight of the
20 quantity of filler material is greater than the predetermined weight of the alumina substrate, but less than or equal to five times the predetermined weight of the alumina substrate.

28. The method of claim 27, wherein the predetermined weight of the
25 quantity of filler material is about two times greater than the predetermined weight of the alumina substrate.

29. The method of claim 22, wherein each of the alumina substrate and
the filler material has a harness according to the Mohs scale, and wherein
the hardness of the alumina substrate is greater than the hardness of the
30 filler material.

30. The method of claim 29, wherein the hardness of the alumina
substrate is greater than about 2.5 according to the Mohs scale, and the
hardness of the filler material is less than about 2.5 according to the Mohs
35 scale.

10071565-020802